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13MAW02 3717903-1 INDEXED

2. Patent application number  
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0210830.6

P01/7700 0.00-0210830.6

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Michael Man-Cheung Tsang  
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Patents ADP number (if you know it)

8381006000

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

Fitting Protector

5. Name of your agent (if you have one)

Sanderson &amp; Co.

"Address for service" in the United Kingdom to which all correspondence should be sent (including postcode)

34 East Stockwell Street  
Colchester  
Essex  
CO1 1ST

Patents ADP number (if you know it)

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Country

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Description 8

Claim(s) 3

Abstract

Drawing(s) 3 *+ 3* *M*

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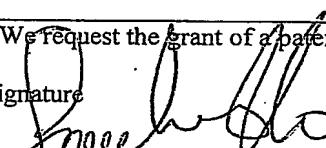
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11.

Sanderson & Co.  
Agents for the applicant

I/We request the grant of a patent on the basis of this application.

Signature 

Date 10.05.2002

12. Name and daytime telephone number of person to contact in the United Kingdom

James Sanderson 01206 571187

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### Fitting Protector

The present invention relates to a fitting protector for use in a ceiling void. The fitting protector finds particular use in preventing insulating or inflammable materials from coming into contact with recessed light fittings.

5 A variety of fittings, such as recessed light fittings, can extend into ceiling or roof voids, but must not come into contact with material such as insulation that is placed in those voids. Recessed light fittings can in normal operation become very hot and contact between such hot fittings and insulating material (or other inflammable material) is dangerous as it can lead

10 to fire or damage.

It is therefore desirable to provide some form of guard or shield that prevents contact between the fittings and the insulation material. Some attempts have been made to address this problem, but these prior efforts have failed to produce a simple cheap effective solution. Worse still, the 15 previous efforts have required complicated or time-consuming fitting which made them unsuitable. In contrast the present invention aims to provide a simple mechanism by which fittings can be protected from contact with insulation material, which mechanism is simple and quick to install, is stable once installed, and which permits a proper depth of insulation to be fitted 20 close to lights and other such fittings. It further aims to provide a fitting protector that may be adjusted to fit around a variety of differently sized-fittings.

Therefore according to the present invention there is provided a fitting protector for use with a fitting that extends through ceiling material into a void 25 therebehind, comprising a shell adapted for location within the void around

that part of the fitting which extends into the void, and locating means adapted to co-operate with a mechanism by which the fitting is held in place, so as to hold the shell in place around the fitting such that the shell prevents insulating material in the void coming into contact with the fitting.

5 It is preferred that the locating means includes a tab that extends from the shell and in use lies against the ceiling material and is engaged by said mechanism. More than one tab may be used, and the or each tab may extend inwardly from the lower edge of the shell toward the fitting. If more than one tab is used, the tab may be positioned at suitably spaced locations  
10 such that once each tab is fixed down the stability of the shell is enhanced. The tab may extend across the lower end of the shell with each end of the tab being fixed to a different region of the tab.

The mechanism by which the fitting is held in place may comprise fixtures such as screws that are connected to the ceiling material, and the tab  
15 may be adapted for connection to the ceiling material by the same screw or screws. However, many recessed fittings, especially recessed light fittings are attached to the ceiling material by spring-mounted arms that bear on the rear face of the ceiling material. These pull the fitting upwards until suitable abutments on the fitting come into contact with the front face of the ceiling.  
20 No other fixing is needed because the tension in the spring clamps the fitting in place. When used in conjunction with such fittings the tab or tabs may be adapted to locate between the ceiling material and the spring-mounted arms, such that the protector is held in place.

The shell may be a complete construction that is placed over the fitting.

25 Alternatively the shell may be constructed to be relatively separable, better to permit

location of the shell around a fitting. Whilst the two parts of the shell may take a multitude of suitable forms, it is preferred that each of the two parts is generally channel-shaped. The channel-shaped parts may be generally symmetrical halves of a shell, or may be different but complementary in  
5 shape.

The two parts of a shell need to be connected together, and this can be done in several ways. Each channel-shaped part can have a pair of flanges and the flanges of one part can inter-engage with the flanges of the other part. This inter-engagement can be such that the two parts are relatively adjustable  
10 so that the volume defined by the shell is similarly adjustable. Alternatively, the inter-engagement can produce a fixed size shell.

The outer edges of the flanges of one channel-shaped part may be adapted such that they can be received in suitably adapted co-operating means provided on the flanges of the other channel-shaped part.  
15 Alternatively the flanges of one channel-shaped part may overlie the flanges of the other channel-shaped part and may be connected thereto by clips. Such clips may be separate from the shell and be connected thereto only when joining the overlying flanges of the two parts. In a further alternative embodiment, the flanges of one channel-shaped part may be adapted to  
20 engage the flanges of the other channel-shaped part by sliding inter-engagement in a lengthwise direction.

The two parts of the shell may be hingedly connected together so that relative separation of the two parts involves pivoting about the hinge. The hinge may be provided between the outer edges of two flanges of separate  
25 parts, with the outer edges of the other flanges being brought together or

separated by relative hinging of the two parts of the shell. Means may be provided to connect the edges of the unhinged flanges together as required.

The shell may take any suitable overall shape, but it has been found that for ease of construction the shell may form a tube of generally square or 5 circular cross section, which has an open lower end that lies against the ceiling material and an open upper end. To form such tubular shells, each channel-shaped part has a generally rectangular or semi-circular cross-section as appropriate.

As mentioned above, the upper end of the shell may be open, and this 10 permits heat generated by the fitting to be dissipated, as well as permitting the entry of wiring and other services. In most cases the height of the shell will be such that the top of any insulation layer is below the top of the shell. However, in some circumstances such as when deeper insulation is to be used, it may be desirable to close the upper end of the shell. This upper end 15 may be closed by providing on one or both parts a suitable screen or screens that extend across the channel-shaped parts between the flanges thereof. These screens can be formed from solid material or from mesh, which allows heat transmission from within the shell.

The main intended purpose of the protectors according to the present 20 invention is to prevent insulation coming too close to recessed light fittings, which can become hot during use. Therefore it is preferred that the protector is mounted around such a light fitting and that it is particularly adapted for this purpose.

In order that it may be better understood, but by way of example only, the present invention will now be described with reference to two different embodiments shown in the accompanying drawings, in which:

**Figure 1** is a perspective view of a first embodiment of the invention;

5       **Figure 2** is a side elevation of the embodiment of Figure 1 connected to the upper side of a ceiling;

**Figure 3** is a plan view of the embodiment of Figures 1 and 2 showing the light fitting engaging the tabs;

10      **Figure 4** is a view similar to that shown in Figure 1 but of a slightly different second embodiment;

**Figure 5** is a view similar to Figure 2, but showing the second embodiment of protector in use; and

**Figure 6** is a plan view of the second embodiment of Figures 4 and 5 showing the light fitting engaging the tabs.

15      Referring initially to Figure 1 there is shown a first embodiment of fitting protector generally indicated 10. The protector 10 comprises a first part 11 and a second part 12, both of which are generally square channel-shaped. The channel-shaped first part 11 comprises a web 14 and a pair of opposed flanges 15, 16 that extend perpendicular therefrom, and the second part 12 similarly comprises a web 17 and opposed flanges 18, 19. Slots 20 are formed on the edges of the flanges 18 and 19, and these are adapted to receive the outer edges 21 of the flanges 15, 16 of the first part 11 so as to connect the two parts.

20      The distance between the flanges 15, 16 of the first part 11 is slightly greater than the distance between the flanges 18, 19 of the second part 12.

This not only aids the connection of the outer edges 21 into the slots 20, but allows the second part 12 to be located within the first part 11 for storage. The second part 12, if rotated by 180°, will locate between the flanges 15, 16 of the first part 11, thus reducing the space needed for transport and storage  
5 of the unused device.

The second part 12 has, connected to its lower edge 23, a pair of opposed tabs 25, 26, which extend inwardly from the flanges 18, 19 and are approximately perpendicular thereto. The protector is shown in its normal orientation, with the lower end being placed against the ceiling material (not 10 shown in Figure 1) and the upper end being open to permit the escape of heat from the light fitting that is being protected, and amongst other things the maintenance of the fitting.

In use, as is best shown in Figure 2, the two parts 11, 12 of the protector 10 are located around a fitting 30 and by locating the outer edges 21 15 in the slots 20, the two parts are fitted together to define an insulation free area around the light fitting 20. The protector is located on the upper side of a sheet of ceiling material 31, which is connected to ceiling supports 32, and through which the fitting 30 extends. Insulation material 33 is packed around the protector to provide efficient insulation, without causing danger by coming 20 into contact with the hot light fitting 30.

The light fitting is held in place in the ceiling material 31 by spring arms 34 that bear down on the upper side of the ceiling material 31 and pull the outer face 35 of the fitting 30 into abutment with the lower side of the ceiling material 31. As can best be seen in Figure 3 (which is somewhat simplified as

compared to Figure 2) the spring arms 34 bear on the tabs 25, 26 and clamp them to the ceiling material 31 thereby holding the protector 10 in place.

The light fitting 30 is connected to a power supply by a cable 36, which passes out of the protector 10 through the open top thereof. The two-part 5 construction allows the protector 10 to be fitted around the light fitting after it has been wired in and before the insulation material 33 has been laid.

A second embodiment of protector, generally indicated 40 is shown in Figures 4 to 6. This embodiment is very similar to that shown in Figures 1 to 3, save in that the mechanism by which the two parts are joined is different. 10 Where possible like reference numerals have been used to refer to like parts.

In the second embodiment (Figures 4 to 6) the first part 41 is slightly wider than the second part 42 and the outer edges 21 of the first part 41 are adapted to overlie the outer edges 43 of the second part 42. The second part 42 is not provided with slots 20 as in the first embodiment, but in all other 15 respects is the same. Elongate metal clips 44 are passed over the regions of the first and second parts which overlie each other, so as to fix them together. Such clips can be normally attached to one or other of the parts, or may be separate and connected thereto as required. In all other respects, as can be seen from Figure 5 and 6, the second embodiment operates in exactly the 20 same way as the first embodiment.

The degree by which the first part 41 overlies the second part 42 can be varied, and therefore the volume defined by the shell of the protector 40 can also be controlled. This allows the protector to be fitted to a variety of different fittings, whilst allowing the appropriate separation between light fitting 25 and insulation to be maintained.

The protector may be made from a variety of suitable materials, however sheet metal such as steel has been found to be particularly well suited, both due to its strength and rigidity as well as its ease of handling during manufacture. Fire retardant materials or coatings may be also be used.

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Claims

1. A fitting protector for use with a fitting that extends through ceiling material into a void therebehind, comprising a shell adapted for location within the void around that part of the fitting which extends into the void, and locating means adapted to co-operate with a mechanism by which the fitting is held in place, so as to hold the shell in place around the fitting such that the shell prevents insulating material in the void coming into contact with the fitting.
2. A fitting protector as claimed in claim 1, wherein the locating means includes a tab that extends from the shell and in use lies against the ceiling material and is engaged by said mechanism.
3. A fitting protector as claimed in claim 2, wherein the locating means includes two or more tabs.
4. A fitting protector as claimed in claim 2 or claim 3, wherein the or each tab extends inwardly from a lower edge of the shell at right angles thereto.
5. A fitting protector as claimed in any of claim 2 to claim 4, wherein one edge of the tab is connected to one region of the shell and another edge of the tab is connected to a different region of the shell.
6. A fitting protector as claimed in any of the preceding claims, wherein the shell comprises two relatively separable parts to permit location of the shell around a fitting.
7. A fitting protector as claimed in claim 6, wherein each of the two parts is generally channel-shaped.

8. A fitting protector as claimed in claim 7, wherein each channel-shaped part has a pair of flanges and the flanges of one part inter-engage with the flanges of the other part.

9. A fitting protector as claimed in claim 8, wherein the connection between the two parts is adjustable such that the volume defined by the shell is adjustable.

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10. A fitting protector as claimed in claim 8, wherein the outer edges of the flanges of one channel-shaped part are received in suitable adapted co-operating means provided on the flanges of the other channel-shaped part.

10 11. A fitting protector as claimed in claim 8, wherein the flanges of one channel-shaped part overlie the flanges of the other channel-shaped part and are connected thereto.

12. A fitting protector as claimed in claim 11, wherein the two parts are connected together using clips that pass over the flanges in the region of 15 overlap between the flanges.

13. A fitting protector as claimed in claim 8, wherein the two parts are hingedly connected together.

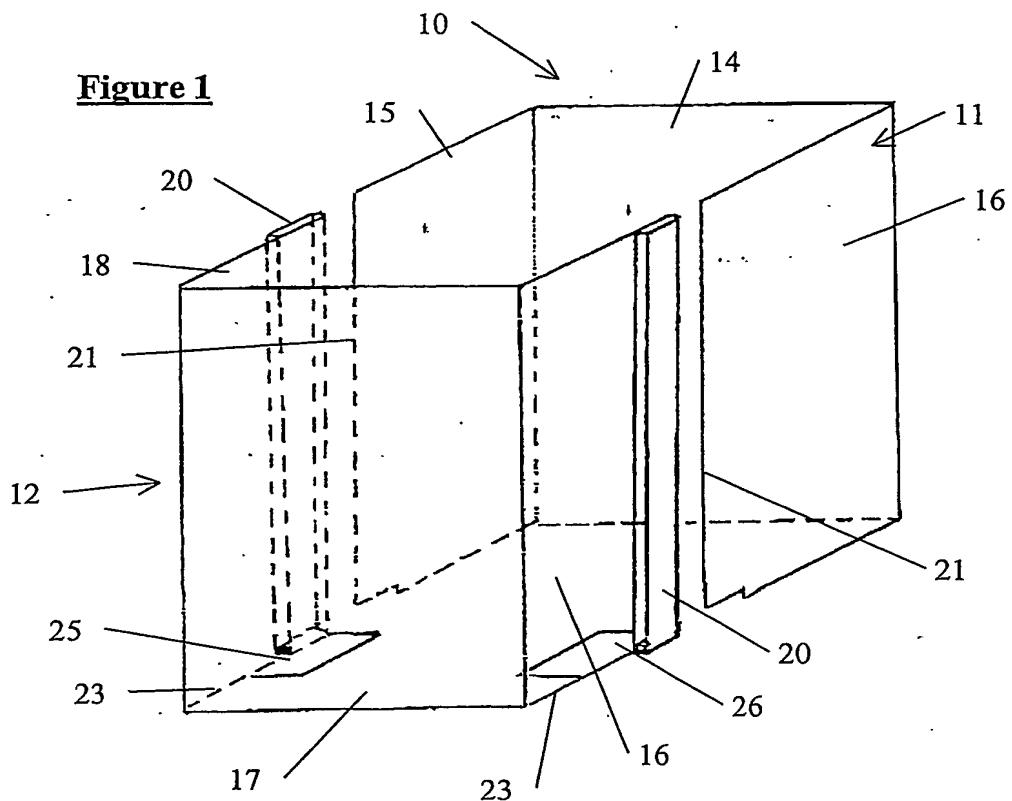
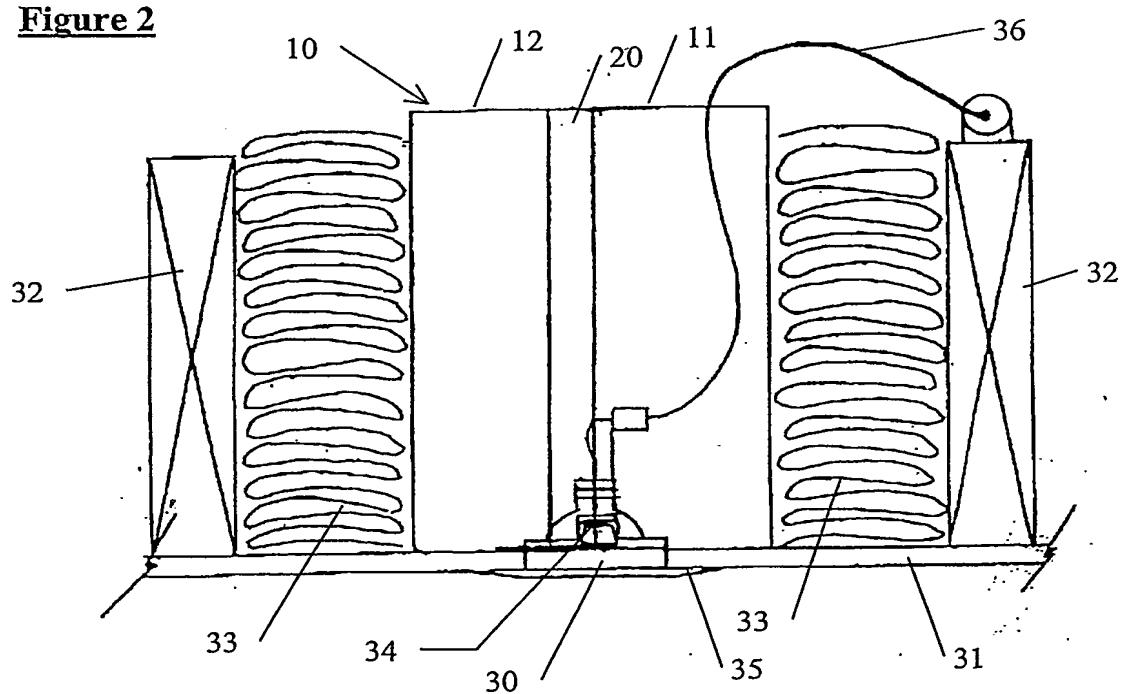
14. A fitting protector as claimed in any of claims 8 to 13, wherein the shell is generally rectangular and each channel-shaped part has a generally 20 rectangular cross-section.

15. A fitting protector as claimed in any of the preceding claims, wherein the shell is closed at its end furthest from the ceiling material.

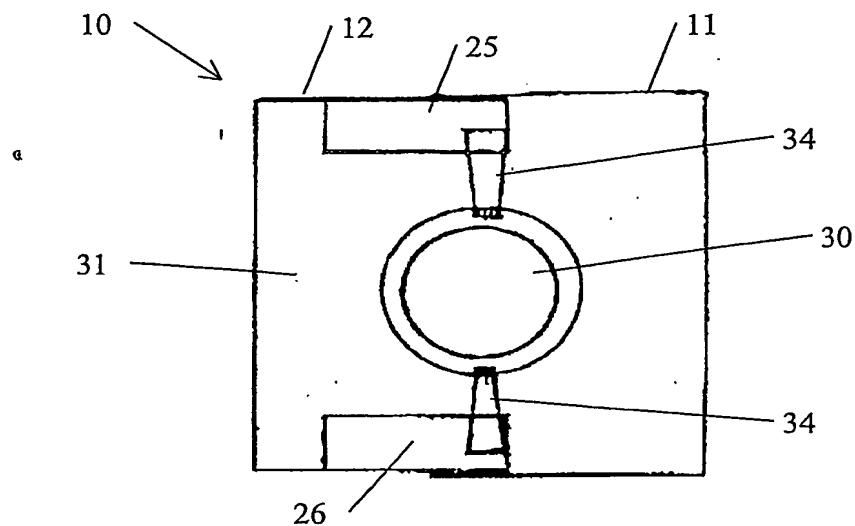
16. A fitting protector as claimed in any of the preceding claims, wherein the fitting around which the fitting protector is mounted is a light fitting.

17. A fitting protector as claimed in claim 1 and substantially as herein illustrated and described with reference to the accompanying drawings.

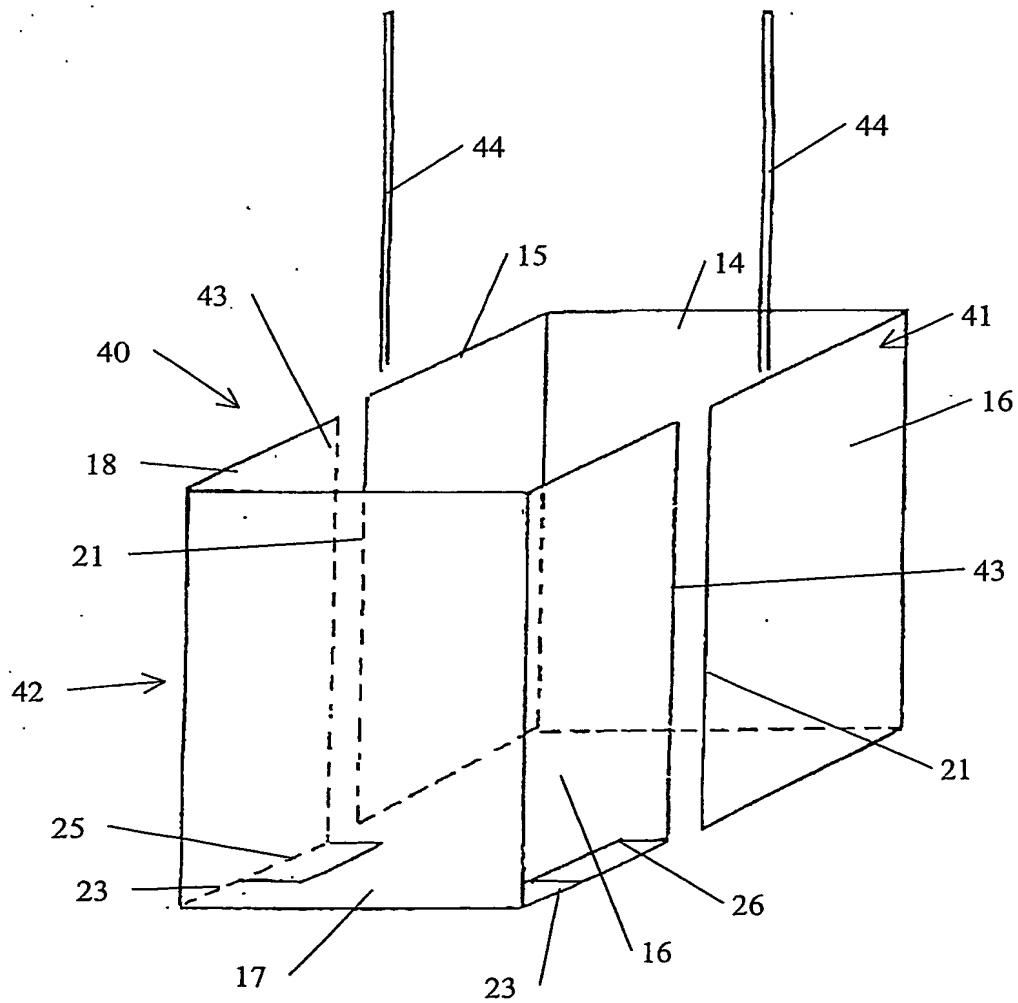


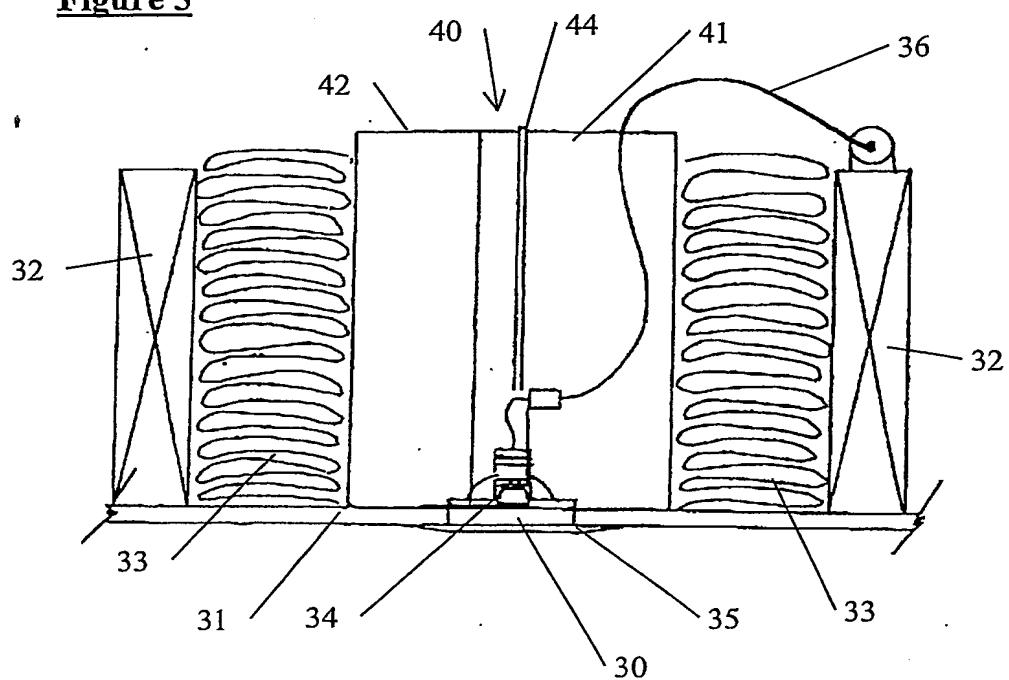
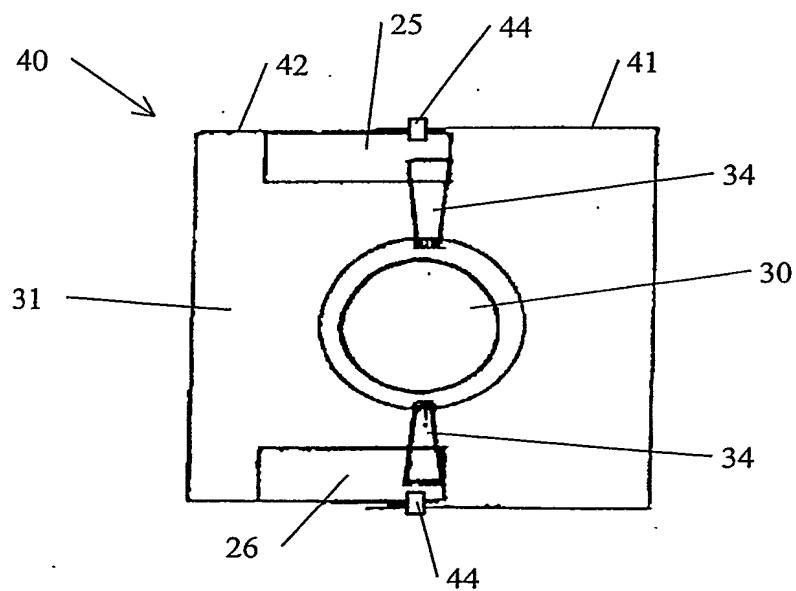
**Figure 2**

**Figure 3**



**Figure 4**



**Figure 5****Figure 6**

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